

REMARKS

Reconsideration of the present application as amended is respectfully requested. Claims 1, 7, and 14 have been amended. Support for the amendments to claims 1, 7, and 14 can be found at at least page 6, line 27 to page 7 to page 9, line 4 and Figure 2 of the specification as originally filed. Claims 1-20 are currently pending.

Claims 3, 4, 9, 10, 16, and 17 stand objected to as being dependent upon a rejected base claim, but are indicated as allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicant wishes to thank the Examiner for the indication of allowable subject matter with respect to claims 3, 4, 9, 10, 16, and 17.

Claim 11 stands rejected under 35 U.S.C. 112, first paragraph as failing to comply with the written description requirement. In particular, the Office Action asserts that "the specification and the drawings do not show the holding chamber (35) as comprising: at one injection nozzle, and electronic valve, a mechanical valve or a pump for providing the desired predefined volume of the nitrogen enriched air to the combustion chamber." Applicant respectfully disagrees. Applicant respectfully submits that specification support for claim 11 can be found at at least page 8, line 26 to page 9, line 2 which describes that "control of the release of the nitrogen-enriched air from the holding chamber 35 can be accomplished through a variety of means including injection nozzles, electronic valves, mechanical valves, pumps, etc." Applicant respectfully submits that claim 11 fully complies with the requirements of 35 U.S.C. 112, first paragraph, and requests that the 35 U.S.C. 112, first paragraph rejection of claim 11 be withdrawn.

Claims 1, 2, 5-8, 11-15, and 18-20 stand rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,649,517 to Poola et al. ("Poola"). Regarding independent claim 1, the Office Action asserts that Poola discloses "a method for the operation of an internal combustion engine comprising the steps of: providing oxygen-enriched air and fuel to a combustion chamber; initiating combustion of the oxygen-enriched air and fuel; and providing a predefined volume (col. 10, ll. 64) of nitrogen-enriched air to the combustion chamber after a

predefined time delay (after initial periods of start-up and warm-up, col. 10, ll. 20; 'few minutes' in col. 6, ll. 38) to be used during the remainder of the combustion."

Independent claim 1 as amended is directed to a "method for the operation of an internal combustion engine comprising the steps of: providing oxygen-enriched air and fuel to a combustion chamber; initiating combustion of the oxygen-enriched air and fuel; and providing, separately from the oxygen-enriched air, a predefined volume of nitrogen-enriched air to the combustion chamber after a predefined time delay to be used during the remainder of the combustion." Applicant respectfully submits that Poola fails to teach or suggest at least the feature of independent claim 1 as amended of "providing, separately from the oxygen-enriched air, a predefined volume of nitrogen-enriched air to the combustion chamber after a predefined time delay to be used during the remainder of the combustion." Poola describes air supply control system for an internal combustion engine in which an air separation membrane device is used to separate ambient air into oxygen enriched air and nitrogen enriched air. Poola further describes that the oxygen enriched air and the nitrogen enriched air is mixed with ambient air in a mixing chamber and supplied to the intake of an internal combustion engine. In contrast to the invention of independent claim 1 in which oxygen-enriched air and nitrogen-enriched air are separately provided to a combustion chamber, Poola describes mixing oxygen-enriched air, nitrogen enriched air, and ambient air in a mixing chamber prior to introduction into an engine intake. Applicant respectfully submits that Poola fails to teach or suggest separately providing oxygen-enriched air and nitrogen-enriched air to a combustion chamber as found in independent claim 1 as amended.

Furthermore, Applicant respectfully submits that Poola fails to teach or suggest providing, after initiation of combustion of oxygen-enriched air and fuel in a combustion chamber, a predefined volume of nitrogen-enriched air to the combustion chamber after a predetermined time delay to be used during the remainder of the combustion. Although column 10, line 20 of Poola describes that oxygen enriched air can be supplied to the mixing chamber and then to an air intake line during initial periods of start-up and warming-up, and that column 10, line 64 of Poola describes that nitrogen enriched air also can be provided to the mixing chamber, Applicant respectfully submits that Poola contains no teaching or suggestion of initiating combustion of oxygen enriched air and fuel in a combustion chamber, and then, after a

predefined time delay, providing a predefined volume of nitrogen enriched air to the combustion chamber to be used during the remainder of the combustion as found in independent claim 1 as amended. Applicant respectfully submits that independent claim 1 as amended distinguishes over Poola and requests that the 35 U.S.C. 102(b) rejection of independent claim 1 be withdrawn.

Regarding independent claim 7, the Office Action indicates that Poola discloses "an apparatus comprising: a separation device (18) for receiving an input air stream (46a) and producing oxygen-enriched air (50a) and nitrogen-enriched air (52b); a holding chamber (22) for receiving the nitrogen-enriched air from said separation device (18); a combustion chamber (10) for receiving the oxygen-enriched air from said separation device and a combustible fuel, the combustion chamber initiating a combustion process using the oxygen-enriched air and the combustible fuel, and further receiving a predefined volume of the nitrogen-enriched air from the holding chamber after a predefined time delay to be used during the remainder of the combustion process."

Independent claim 7 has been amended to include the features of "a holding chamber for receiving, separately from the oxygen-enriched air, the nitrogen-enriched air from said separation device" and "a combustion chamber for receiving the oxygen-enriched air from said separation device and a combustible fuel, the combustion chamber initiating a combustion process using the oxygen-enriched air and the combustible fuel, and further receiving, separately from the oxygen-enriched air, a predefined volume of the nitrogen-enriched air from the holding chamber after a predefined time delay to be used during the remainder of the combustion process." For similar reasons as those discussed with respect to independent claim 1, Applicant respectfully submits that independent claim 7 as amended distinguishes over Poola and requests that the 35 U.S.C. 102(b) rejection of independent claim 7 be withdrawn.

Regarding independent claim 14, the Office Action asserts that "with regard to claims 12-15 and 18-20, all the claimed subject matter are cited in the above rejections." Independent claim 14 has been amended to include the features of "a holding chamber for receiving, separately from the oxygen-enriched air, the nitrogen-enriched air from said separation device" and "a combustion chamber for receiving the oxygen-enriched air from said separation device and a combustible fuel, the combustion chamber initiating a combustion process using the

Application No.: 10/502472


oxygen-enriched air and the combustible fuel, and further receiving, separately from the oxygen-enriched air, a predefined volume of the nitrogen-enriched air from the holding chamber after a predefined time delay to be used during the remainder of the combustion process." For similar reasons as those discussed with respect to independent claim 1, Applicant respectfully submits that independent claim 14 as amended distinguishes over Poola and requests that the 35 U.S.C. 102(b) rejection of independent claim 14 be withdrawn.

Claims 2-6, 8-13, and 15-20 are dependent upon and include the features of independent claims 1, 7, and 14, respectively. For at least the reasons discussed with respect to independent claims 1, 7, and 14, Applicant respectfully submits that claims 2-6, 8-13, and 15-20 also distinguish over Poola and requests that the 35 U.S.C. 102(b) rejections of claims 2-6, 8-13, and 15-20 be withdrawn.

In view of the above amendment, Applicant believes the pending application is in condition for allowance.

Dated: July 11, 2005

Respectfully submitted,

By 

Michael W. Maddox

Registration No.: 47,764

JENKENS & GILCHRIST, A PROFESSIONAL
CORPORATION

1445 Ross Avenue, Suite 3200

Dallas, Texas 75202

(214) 855-4500

Attorneys For Applicant